

AMENDMENTS TO THE CLAIMS

Please amend claims 12 and 20, and add new claim 27 as indicated below. No new matter is believed to be introduced as a result of the aforementioned amendments and new claim.

1. **(Original)** A vertical cavity surface emitting laser (VCSEL) comprising:
a substrate;
a first mirror situated on said substrate;
an active region situated on said first mirror;
a second mirror situated on said active region;
a first contact situated on a first portion of said second mirror;
a thermally conductive layer situated on a second portion of said second mirror; and
wherein said thermally conductive layer is thermally connected to said first contact.
2. **(Original)** The VCSEL of claim 1, further comprising a thermally conductive metal connected to said first contact.
3. **(Original)** The VCSEL of claim 2, wherein said substrate comprises InP.
4. **(Original)** A VCSEL comprising:
a top mirror; and
a thermally conductive cover on said top mirror.
5. **(Original)** The VCSEL of claim 4, further comprising a thermally conductive material connected to said thermally conductive cover.
6. **(Original)** The VCSEL of claim 5, wherein said top mirror comprises InP based material.

7. **(Original)** The VCSEL of claim 6, wherein said top mirror is designed for reflecting some radiation having a wavelength be 1200 and 1800 nanometers (nm).

8. **(Original)** The VCSEL of claim 7, wherein said thermally conductive cover comprises a material from a group of GaP, SiN, AlN, BN, SiC, diamond, and the like.

9. **(Original)** The VCSEL of claim 8, wherein said thermally conductive material comprises a material from a group of gold and like materials.

10. **(Original)** The VCSEL of claim 4, further comprising a heatsink connected to said thermally conductive cover.

11. **(Original)** The VCSEL of claim 10, further comprising a first contact situated on said top mirror and thermally connected to said thermally conductive cover and said heat sink.

12. **(Currently amended)** A VCSEL comprising:
 a substrate;
 a first mirror situated on said substrate;
 an active region situated on said first mirror;
 a second mirror situated on said active region;
 a contact situated on a first portion of said [[first]] second mirror;
 a low thermal conductive covering situated on a second portion of said [[first]] second mirror; and
 a thermally conductive material connected to said contact.

13. **(Original)** The VCSEL of claim 12, wherein said substrate comprises InP.

14. **(Original)** The VCSEL of claim 13, wherein said first mirror comprises a material nearly lattice matched with the InP of said substrate.

15. **(Original)** The VCSEL of claim 14, wherein said thermally conductive material is for conducting heat from said second mirror via said contact.

16. **(Original)** The VCSEL of claim 15, wherein said thermally conductive material comprises material from a group of gold and other like materials.

17. **(Original)** The VCSEL of claim 16, wherein the VCSEL is for emitting a laser light having a wavelength between 1200 nm and 1800 nm.

18. **(Original)** The VCSEL of claim 15, wherein said contact comprises a thermally conductive material.

19. **(Original)** The VCSEL of claim 18, wherein said thermally conductive material is connected to a heat sink.

20. **(Currently amended)** A VCSEL comprising:
a substrate;
a first semiconductor mirror situated on said substrate;
an active region situated on said first semiconductor mirror;
a second semiconductor mirror situated on said active region;
a dielectric mirror situated on said second semiconductor mirror;
a first contact situated on said [[first]] second semiconductor mirror; and
a metal interconnect connected to said [[first]] second contact and in contact with an edge of said dielectric mirror; and
wherein said dielectric mirror comprises thermally conductive material.

21. **(Withdrawn)** A VCSEL comprising:
- a substrate;
 - a first mirror situated on said substrate;
 - an active region situated on said first mirror;
 - a second mirror situated on said active region;
 - and
- a thermally conductive material in contact with an edge of said second mirror.
22. **(Withdrawn)** The VCSEL of claim 21, further comprising a thermally conductive layer situated on said second mirror.
23. **(Withdrawn)** The VCSEL of claim 22, further comprising a thermally conductive material situated on said thermally conductive layer.
24. **(Withdrawn)** The VCSEL of claim 21, further comprising a contact situated on said second mirror.
25. **(Withdrawn)** The VCSEL of claim 24, further comprising a thermally conductive layer on said second mirror.
26. **(Withdrawn)** The VCSEL claim 25, further comprising a thermally conductive material situated on said second mirror and said contact.

27. (New) A vertical cavity surface emitting laser, comprising:
a substrate;
a first mirror situated on said substrate;
an active region situated on said first mirror;
a second region situated on said active region;
a contact situated on said second mirror; and
a thermally conductive structure arranged for thermal communication with a portion
of at least one of: the first mirror; and, the second mirror.